

DESCRIPTION OF HORSEFLIES FROM MIDDLE AMERICA II.*

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There has been notable progress in the study of Tabanidæ in the last few years. Many new genera have been added and some have been thrown into synonymy. Numerous generic characters are available in the Pangoninæ, but this can hardly be said of the Tabaninæ.

The material used for this paper is from various sources, but much of it is the property of the United States National Museum and the American Museum of Natural History.

PANGONINÆ.

The following key is offered as an aid in separating the genera of Pangoninæ of the region covered by the present paper only:

1. Eyes distinctly hairy..... 2
Eyes bare..... 6
2. First posterior cell of the wing open..... *Diatomineura*
First posterior cell of the wing closed..... 3
3. Fourth posterior cell of the wing closed..... *Scione*
Fourth posterior cell of the wing open..... 4
4. Third antennal segment branched..... 5
Third antennal segment not branched..... *Erephopsis*
5. Third antennal segment branched both dorsally and ventrally..... *Pityocera*
Third antennal segment branched dorsally only..... *Stichocera*
6. First posterior cell of the wing closed..... *Pangonia*
First posterior cell of the wing open..... 7
7. Third antennal segment composed of at least seven rings, the first of
which is only slightly longer than the following ones..... 8
Third antennal segment composed of five rings, the first of which is
much longer than the following ones..... 10
8. Eyes of the female acutely angulate above, wings of both sexes dark on
the anterior part, hyaline behind..... *Goniops*
Eyes of the female not acutely angulate above, wings nearly uniform in
color or hyaline..... 9
9. Front of the female wide, wider below than above, ocelli present, proboscis
only a little longer than the palpi..... *Apatolestes*
Front of the female of normal width or narrow, its sides usually parallel,
proboscis often elongate..... *Corizoneura*
10. Second segment of the antenna only half as long as the first..... *Silvius*
Second segment of the antenna distinctly more than half as long as the
first..... *Chrysops*

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***Pangonia translucens* Macquart.**

Thorax plain brown, wings uniformly nearly black, legs, antennæ, palpi and proboscis very dark colored, nearly black. First two segments of the abdomen above pale, segments three, four and five black, usually with a sparse fringe of white hairs on the posterior margin of each. In some specimens the posterior margins of segments three and following segments are pale. Segment two is marked with an elongate more or less triangular black spot in the middle of the dorsum.

Pangonia fusciformis Walker is considered as a synonym. Miss Gertrude Ricardo has redescribed Walker's type in *Annals and Magazine of Natural History*, Series 7, Volume V, page 170.

Seven specimens, all females, from Ecuador, Canal Zone, Panama and Guatemala show sufficient variation to include both *translucens* and *fusciformis*.

***Pangonia melanopus* n. sp.**

Thorax brown, wing black to the axillary incision, pale yellowish to the tip of the anal vein and nearly to the tip of the first vein near the costa; from thence to the apex nearly uniform fuscous, first posterior cell closed, second submarginal cell with a long appendage. Legs very dark brown, almost black. Abdomen above, first segment wholly dark brown, second segment wholly pale yellow, third, fourth and fifth segments widely dark brown with the lateral margins yellow; abdomen ventrally, pale yellow, darker near the tip. Thorax and abdomen clothed with golden yellow hair.

Length of the female 17 millimeters. Front nearly twice as wide near the lower corner of the eyes as at the vertex, ocelli prominent, antenna with the first and second segments yellowish gray pollinose and black haired, third segment bright yellow, palpi brown.

Length of the male 15 millimeters. Colored like the female except the second abdominal segment has an elongate obscure dark marking at the middle of the dorsum and the brown of the following segments is hardly as well defined. It is doubtful if these differences would be constant in a series of specimens.

Holotype female and allotype male collected at Villa Union, Sinola, Mexico, Presidio River, by B. P. Clark, in the United States National Museum. A paratype female from Villa Union, Sinaloa, Mexico, Rusche, collector, in my collection.

This insect is closely related to *Pangonia caustica* Osten Sacken, which has the thorax clothed with black hair, instead of yellow, the tibia and tarsi rufous instead of black, and the abdomen quite differently colored, besides other differences. *Pangonia pavida* Williston has much in common with *melanopus* also.

***Pangonia delta* n. sp.**

Length of the female 18 millimeters. A pale brown species. Body clothed with black and white hair. Wings very pale yellowish, legs largely dark brown.

Eyes black, frontal triangle and face light brown, proboscis dark brown, palpi yellowish, slender, projecting forward, antenna largely bright yellow, first two segments thinly gray pollinose and pale haired, beard very pale yellowish. Thorax pale brown, sparsely gray pollinose, not striped, dark brown haired dorsally and pale haired on the sides. Wing pale yellowish, veins yellow, first posterior cell closed and petiolate, second submarginal cell appendiculate. Legs brown, femora darker than the other parts, everywhere dark haired. Scutellum with a marginal row of long, pale hairs. Abdomen pale yellowish brown slightly darker towards the apex, first segment gray pollinose all over and with numerous pale hairs, following segments pale brown, thinly dark haired, with conspicuous long, white hairs on the posterior margin of each, most numerous toward each side.

Holotype male from Huachuca Mountains, Arizona, August 12, 1899, and paratype male from Palmerlee, Arizona, taken in September.

This is a difficult species to characterize, because it has no contrasting markings, but is very different in appearance, nevertheless, from other North American species of the genus known to me.

***Pangonia parishi* n. sp.**

Length of the female 16 millimeters. A pale species without contrasting markings, wings fuliginous, darker on the basal half in front, legs yellow, first segment of the abdomen beneath the scutellum dark brown.

Front pale brown pollinose, at the ocelli about half a millimeter in width, very slightly wider at the lower angle of the eyes. Frontal callosity below about one-third the width of the front, gradually narrowed and apparent above nearly to the ocelli. Antenna yellow, first two segments gray pollinose and with a few dark hairs, third segment, enlarged at the base, quite abruptly narrowed, and slender to the apex. Face gray pollinose with a few pale hairs, beard very pale yellowish, palpi slender, of nearly uniform width, yellow, arcuate and black haired; proboscis dark, a little longer than the height of the head. Thorax, including the scutellum light brown above, pale yellowish on the sides and clothed with pale hair; legs yellow, tarsi darker apically; wing fuliginous, noticeably darker on the basal half in front, first posterior cell closed, second submarginal cell with a long appendage. First segment of the abdomen dorsally dark brown beneath the scutellum, otherwise first and second segments very pale yellowish with pale hairs intermixed with a very few black ones, third segment of the same ground color, black haired on the basal three-fourths

and pale haired on the apical fourth, the remaining segments appear darker on account of being rather thickly black haired with only a few light ones intermixed. On account of the color of the vestiture mainly, the abdomen appears to be colored as follows: first and second segments pale, third darker with a pale posterior margin, remaining segments dark.

Holotype female and a paratype female from Ecuador, collected by Parish, in my collection.

This insect may be readily distinguished from others of its group by the dark brown marking on the first abdominal segment beneath the scutellum.

Scione aurulans Wiedemann.

The genus *Scione* of Walker, often given as *Diclisia* of Schiner, is characterized by hairy eyes and by the first and fourth posterior cells of the wings being closed. About a dozen species of rather small sized Pangoninae are included under it. I found one species common in various localities in Central America in March, 1906, and procured a long series of specimens. With good material at hand, careful comparisons with descriptions have been made and I am convinced that I have the species which Wiedemann called *Pangonia aurulans* and which has never been recognized since, and also that *Pangonia rostrifera* Bellardi and *Diclisia misera* Osten Sacken, are synonyms.

The species occurs over a wide range for specimens are at hand from Tabasco, Jalapa and other Mexican localities, from various places in Guatemala and from San Pedro, Honduras. Specimens vary somewhat in size and in length of proboscis, but are very uniform otherwise.

It is an annoying fly where it abounds. It appeared to keep close to the ground and with its long proboscis had no trouble biting through one's trousers. More than a score of specimens were actually counted on my clothing at one time.

TABANINAE.

Tabanus punctipleura n. sp.

A large robust species of nearly uniform purplish brown color; third segment of the antenna with a long basal projection. A small conspicuous patch of intense black hairs somewhat more than a millimeter in diameter on each pleura just beneath the attachment of the wing. Length 22 millimeters.

Female. Front about three-fourths of a millimeter in width, yellowish pollinose, sides parallel, frontal callosity at the lower angle of the eye about one-third as wide as the front, shining brown, gradually narrowed and entirely disappearing slightly before the vertex; face yellowish pollinose, beard pale yellow, antenna reddish basally dark brown apically, first segment enlarged and black haired above, third segment with a slender basal projection which is more than a third of the length of the segment; palpi pale brown and largely black haired. Thorax purplish brown and largely clothed with pale yellowish vestiture especially on the sides; a minute tuft of very pale hair immediately in front of the attachment of each wing and just beneath a small round patch of intense black hair producing a conspicuous spot from which the insect is named. Immediately in front of the scutellum on the mid-dorsal line a short and a narrow transverse patch of intense black hair limited at either end by a minute tuft of nearly white hair. Wings brownish all over, stigma intense brown; legs reddish brown, tarsi darker than the other parts. Abdomen darker than the thorax but of the same general color, black haired and without markings, except a small area of white hair on each posterior lateral margin of each of segments one to four.

Holotype female from San Carlos, Costa Rica, and one paratype female from Carillo, Costa Rica, collected by Schild and Burgdorf, in the United States National Museum. A paratype from San Carlos, Costa Rica, by the same collector, and another simply labelled Costa Rica, in my collection.

The last mentioned specimen was named *Tabanus dephilippi* when I received it, but there is no reason for confusing *punctipleura* with the last named species, for they are entirely distinct.

***Tabanus fumomarginatus* n. sp.**

Wing veins margined with fuscous, general color of the body brown, a conspicuous round black spot on the scutellum margined with gray pile. Length 18 millimeters.

Front about a half millimeter in width, sides parallel, frontal callosity shining brown, at the angle of the eyes distinctly narrower than the front and gradually narrowed to its termination half way to the vertex; antenna dark reddish, darker towards the apex where it is nearly black, first segment much enlarged, produced forward above, largely black hairy; third segment slender, with a basal prominence only, basal portion very distinctly longer than the annulate portion. Palpi pale in color, enlarged basally and narrowed towards the apices. Eyes bare. Thorax rubbed somewhat but with pale stripes, ground color brown; scutellum with a conspicuous round black spot margined with a ring of light pile, part of which is on the posterior margin of the mesothorax, wings quite dark approaching fuscous, distinctly darker along the margins of the veins than elsewhere. Legs dark brown, front femora above and all of the tarsi nearly black, front tarsal segments

distinctly wider than those of the other feet, all of the posterior cells of the wings open, furcation of the third vein without an appendage. Abdomen brown, somewhat darker dorsally than ventrally, posterior margins of the segments dorsally narrowly pale and each expanded into a gray triangle at the middle. The middorsal row of triangles does not show conspicuously for the description is taken from alcoholic material.

Holotype female and a paratype female from Rio Caiary, Uaupes, State of Amazonas, Brazil, H. Schmidt, collector, in the American Museum of Natural History. A paratype with the same date in my collection.

I have a half dozen species of *Tabanus* with the conspicuous spot on the scutellum, but this is fully distinct from any of them. The widened front tarsi are useful in determining this insect.

***Dichelacera melanosoma* n. sp.**

Body shining black, except the first abdominal segment. Wing pure black with hyaline markings. Length of the female 12 millimeters.

Front dark gray pollinose, frontal callosity shining black, as wide as the front, nearly square, acute angulate above and with a short linear extension towards the vertex. Antenna largely pale although much of the third segment is black, especially the annulate portion; basal extension of the third segment slender and more than half as long as the segment, palpi black, facial callus very prominent and shining black. Dorsum of the thorax plain black, including the scutellum; front leg black except the basal half of the tibia which is white, middle and hind femora black, tibiae and tarsi white; wing black with the axillary cell, a median posterior half band and the wing margin between apex and the fifth posterior cell hyaline. The hyaline half band includes the narrow apexes of the second basal, discal and fourth posterior cells and a large part of the fifth posterior forming an area of uniform width which reaches from the middle of the wing to the posterior margin. See Figure 1. Abdomen dorsally, first segment nearly white, other segments clear black.

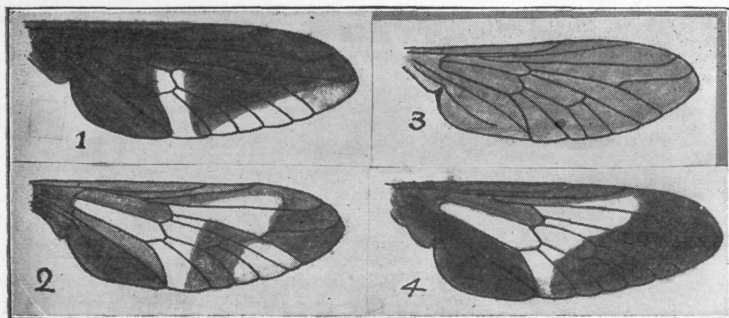
Holotype female from Higuito, San Mateo, Costa Rica, collected by Pablo Schild. In the United States National Museum.

***Dichelacera analis* n. sp.**

Length of the female 10 millimeters. Front gray pollinose, frontal callosity at the lower corner of the eyes as wide as the front, higher than wide, acutely angulate above; face entirely gray pollinose without a shining callus at the middle as in *damnicornis*. Palpi pale, antenna pale basally, apical half of the third segment black, basal extension of the third segment pale, slender, somewhat curved, more than half the length of the segment. Thorax dorsally pale, a clear brown band dis-

tinctly convex before and slightly so behind between the wing attachments; scutellum clear brown; front femur pale basally, dark apically, front tibia and tarsus dark although the tibia is lighter colored basally, middle femur entirely pale, middle tibia and tarsus brown, hind femur pale except at apex where it is black, hind tibia and tarsus black. Wing black as follows: costa including most of the first basal cell, nearly all of the anal cell, apex of the wing beyond the furcation of the third vein and a band beginning at the third vein before its furcation and extending to the posterior margin, also the posterior margin is lightly infuscated for nearly its entire length including the apical half of the axillary cell. See Figure 2. Abdomen dorsally, first segment pale, second segment nearly black, third and fourth segments black, each with a narrow posterior pale yellow margin, following segments black.

Length of the male 10 millimeters. Colored like the female, but the vestiture of the body is longer in this sex.



1. *Dichelacera melanosoma*.
2. *D. analis*.

3. *D. melanoptera*.
4. *D. caloptera*.

Holotype female, allotype male and eight paratype females from Higuito, San Mateo, Costa Rica, collected by Pablo Schild, in the United States National Museum. Two paratype females with the same data in my collection. Ten paratype females from Gatun, Canal Zone, collected by D. E. Harrower, July, in my collection.

The species resembles *damnicornis*, but does not have a shining facial callus as that species and the wing markings are differently arranged. It suggests *alcicornis* somewhat, but has the thorax banded instead of striped.

***Dichelacera melanoptera* n. sp.**

Length of the female 10 millimeters. A dark colored species with uniformly colored nearly black wings. All the tibia white except at the apexes where they are dark brown. Thorax dorsally and anterior part

of the abdomen dark brown, abdomen gradually darker posteriorly and quite black at the apex. Face with a distinct shining callus in the middle, front with an elongate shining black callosity. Antenna, first segment black somewhat elongated, second and third segments brown, basal extension of the third segment slender, elongate, somewhat curved and not quite reaching half of the length of the segment. Legs black except that each tibia is white with a very dark apex. Wing dark, nearly black, posteriorly less intensely colored. Figure 3.

Holotype female from Tukeit, British Guiana, July 17, 1911, and ten paratype females taken between July 16 and August 16, 1911, in the same locality, in the American Museum of Natural History. Three paratype females from the same locality taken July 17, 1911, in my collection.

This is a peculiarly colored species for a *Dichelacera*, but it has the proper characters and aside from color, looks like a member of the genus. Its uniform dark color at once distinguishes it from other species with which it is associated.

***Dichelacera ochracea* n. sp.**

Length of the female 11 millimeters. General color pale yellowish all over without conspicuous markings of any kind. Front yellowish pollinose, frontal callosity shining brown, nearly square with a short extension above. Face yellow pollinose without denuded central callus, palpi yellow, antenna largely yellow, annulate portion of the third segment dark, nearly black. Thorax pale yellow with much golden pubescence, dorsally a uniform band between the attachment of the wings and the scutellum clear brown. Legs pale yellow without distinct markings although the tarsi are a shade darker than the tibia, especially apically. Wing shaded; from some views it appears to be uniform all over but with the insect pinned on a white support or with opaque light the disk of the wing is seen to be less colored than the other parts. Included in the less colored are the second basal and axillary cells, and parts of the marginal, first submarginal, fourth and fifth posterior and all of the discal except its apex. Abdomen dorsally pale yellow and mostly golden haired, bases of the first four segments, especially the third, and all of the last three segments brownish.

Allotype female from Mallali, British Guiana, April 31, 1907, in the United States National Museum. Paratype female from Port of Spain, Trinidad, in my collection.

This is a difficult insect to characterize on account of the lack of contrasting colors, but it is very distinct from other species of the genus known to me.

***Dichelacera caloptera* n. sp.**

Length of the female about 12 millimeters. Front gray pollinose, frontal callosity as wide as the front, shining black, about as high as broad, angulate above; face with a prominent shining callus, palpi yellow. Antenna yellow except the annulate portion of the third segment which is dark, basal extension of the third segment slender, reaching half the length of the segment. Thorax yellow dorsally with a black band between the wing attachments scutellum black; front femur yellow with a brown apex, front tibia yellow basally, otherwise brown, front tarsus dark brown, middle leg all yellow except the tarsus which is pale brown, hind femur yellow, brown at the apex, hind tibia and tarsus dark brown nearly black. Wing clear black with a pale yellowish area which includes the second basal cell and basal parts of the discal, first, fourth and fifth posterior, first submarginal and a small area in the marginal cell. See Figure 4. Abdomen dorsally, first segment pale, following segments each dark on the anterior half and pale on the posterior half.

Length of the male 12 millimeters. Colored like the female and easily associated with it.

Holotype female from the State of Colima, Mexico, collected by L. Conradt, and allotype male from Venodio, Mexico, Rusche collector, in the United States National Museum. A paratype female from Venodio, Mexico, Rusche collector, in my collection.

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